

What is claimed is:

1. A thermoplastic vulcanizate compound, comprising:
a blend of
 - 5 (a) a continuous phase of a polyolefin;
 - (b) a dispersed phase of an olefinic rubber comprising EPDM;
 - (c) a minor amount of a compatibilizer selected from the group consisting of styrenic block copolymers, alpha-olefin copolymers, a copolymer comprising olefin monomeric units and aromatic monomeric units, and combinations thereof; and
 - 10 (d) an oil.
2. The compound of Claim 1, wherein the polyolefin is polypropylene (PP).
3. The compound of Claim 2, wherein the ratio of PP:EPDM ranges from
15 about 1:4 to about 2:1.
4. The compound of Claim 1, wherein the minor amount of compatibilizer ranges from about 0.5 to about 10 weight percent of the compound.
- 20 5. The compound of Claim 4, wherein the styrenic block copolymer comprises styrene-butadiene-styrene, styrene-ethylene-butylene-styrene, or combinations thereof.
6. The compound of Claim 5, wherein the alpha-olefin copolymer comprises
25 ethylene-octene copolymer, ethylene-butene copolymer, ethylene-propylene copolymer, or combinations thereof.
7. The compound of Claim 1, wherein the oil is a mineral oil.
- 30 8. The compound of Claim 1, wherein the olefinic rubber comprises particles dispersed in the polyolefin, and wherein the compatibilizer causes the largest size of particle to be smaller than the compound without the minor amount of the compatibilizer.

9. The compound of Claim 1, wherein melt flow rate of the compound with the minor amount of the compatibilizer is lower than melt flow rate of the compound without the minor amount of the compatibilizer.

- 5 10. A method of using AFM to determine morphology of compatibilized blends of TPV and to predict physical properties therefrom, comprising the steps of:
- (a) preparing small scale batch blends of the TPV;
 - (b) sampling the material as a function of time;
 - (c) elucidating the morphology as a function of time; and
 - 10 (d) developing structure-property relationships from the elucidated structures.